SEQUENCE LISTING

<110> KADOWAKI, Takashi
YAMAUCHI, Toshimasa

<120> REGULATOR FOR ADIPONECTIN RECEPTOR EXPRESSION

<130> SHIMIZU-13116

<150> PCT/JP2005/003744
<151> 2005-03-04

<150> US 60/549,561
<151> 2004-03-04

<160> 15

<170> PatentIn version 3.3

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Leu Pro Arg Gln Arg Ser Cys Thr Trp Pro Leu Pro Arg Pro Glu Phe
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Asn Gln Ser Asn Ser Thr Thr Ser Ser Pro Ala Pro Ser Gly Gly Ala
35 40 45

Ala Ala Asn Pro Asp Ala Ala Ala Ser Leu Ala Ser Ala Ser Ala Val
50 55 60

Ser Thr Asp Phe Met Ser Asn Leu Ser Leu Leu Glu Glu Ser Glu Asp
65 70 75 80

Phe Ala Arg Ala Pro Gly Cys Val Ala Val Ala Ala Ala Ala Ala Ala
85 90 95

Ser Arg Gly Leu Cys Gly Asp Phe Gln Gly Pro Glu Ala Gly Cys Val
100 105 110

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His Pro Ala Pro Pro Gln Pro Pro Pro Thr Gly Pro Leu Ser Gln Pro
        115                 120                 125

Pro Pro Val Pro Pro Ser Ala Ala Ala Ala Ala Gly Pro Leu Ala Gly
    130                 135                 140

Gln Pro Arg Lys Thr Ser Ser Ser Arg Arg Asn Ala Trp Gly Asn Leu
145                 150                 155                 160

Ser Tyr Ala Asp Leu Ile Thr Lys Ala Ile Glu Ser Ser Ala Glu Lys
                165                 170                 175

Arg Leu Thr Leu Ser Gln Ile Tyr Glu Trp Met Val Lys Ser Val Pro
            180                 185                 190

Tyr Phe Lys Asp Lys Gly Asp Ser Asn Ser Ser Ala Gly Trp Lys Asn
        195                 200                 205

Ser Ile Arg His Asn Leu Ser Leu His Ser Lys Phe Ile Arg Val Gln
    210                 215                 220

Asn Glu Gly Thr Gly Lys Ser Ser Trp Trp Met Leu Asn Pro Glu Gly
225                 230                 235                 240

Gly Lys Ser Gly Lys Ser Pro Arg Arg Arg Ala Ala Ser Met Asp Asn
                245                 250                 255

Asn Ser Lys Phe Ala Lys Ser Arg Gly Arg Ala Ala Lys Lys Lys Ala
            260                 265                 270

Ser Leu Gln Ser Gly Gln Glu Gly Pro Gly Asp Ser Pro Gly Ser Gln
        275                 280                 285

Phe Ser Lys Trp Pro Ala Ser Pro Gly Ser His Ser Asn Asp Asp Phe
    290                 295                 300

Asp Asn Trp Ser Thr Phe Arg Pro Arg Thr Ser Ser Asn Ala Ser Thr
305                 310                 315                 320

Ile Ser Gly Arg Leu Ser Pro Ile Met Thr Glu Gln Asp Asp Leu Gly
                325                 330                 335
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Asp Gly Asp Val His Ser Leu Val Tyr Pro Pro Ser Ala Ala Lys Met
            340                 345                 350

Ala Ser Thr Leu Pro Ser Leu Ser Glu Ile Ser Asn Pro Glu Asn Met
        355                 360                 365

Glu Asn Leu Leu Asp Asn Leu Asn Leu Leu Ser Ser Pro Thr Ser Leu
    370                 375                 380

Thr Val Ser Thr Gln Ser Ser Pro Gly Ser Met Met Gln Gln Thr Pro
385                 390                 395                 400

Cys Tyr Ser Phe Ala Pro Pro Asn Thr Ser Leu Asn Ser Pro Ser Pro
                405                 410                 415

Asn Tyr Ser Lys Tyr Thr Tyr Gly Gln Ser Ser Met Ser Pro Leu Pro
            420                 425                 430

Gln Met Pro Met Gln Thr Leu Gln Asp Ser Lys Ser Ser Tyr Gly Gly
        435                 440                 445

Leu Asn Gln Tyr Asn Cys Ala Pro Gly Leu Leu Lys Glu Leu Leu Thr
    450                 455                 460

Ser Asp Ser Pro Pro His Asn Asp Ile Met Ser Pro Val Asp Pro Gly
465                 470                 475                 480

Val Ala Gln Pro Asn Ser Arg Val Leu Gly Gln Asn Val Met Met Gly
                485                 490                 495

Pro Asn Ser Val Met Pro Ala Tyr Gly Ser Gln Ala Ser His Asn Lys
            500                 505                 510

Met Met Asn Pro Ser Ser His Thr His Pro Gly His Ala Gln Gln Thr
        515                 520                 525

Ala Ser Val Asn Gly Arg Thr Leu Pro His Val Val Asn Thr Met Pro
    530                 535                 540
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His Thr Ser Ala Met Asn Arg Leu Thr Pro Val Lys Thr Pro Leu Gln
545                 550                 555                 560

Val Pro Leu Ser His Pro Met Gln Met Ser Ala Leu Gly Ser Tyr Ser
                565                 570                 575

Ser Val Ser Ser Cys Asn Gly Tyr Gly Arg Met Gly Val Leu His Gln
            580                 585                 590

Glu Lys Leu Pro Ser Asp Leu Asp Gly Met Phe Ile Glu Arg Leu Asp
        595                 600                 605

Cys Asp Met Glu Ser Ile Ile Arg Asn Asp Pro Met Asp Gly Asp Thr
    610                 615                 620

Leu Asp Phe Asn Phe Asp Asn Val Leu Pro Asn Gln Ser Phe Pro His
625                 630                 635                 640

Ser Val Lys Thr Thr Thr His Ser Trp Val Ser Gly
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<222> (7)..(1965)

<400> 2

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       1               5                   10

gag ccg ctg ccc cgg cag cgc tcc tgt acc tgg ccg ctg ccc agg ccg        96
Glu Pro Leu Pro Arg Gln Arg Ser Cys Thr Trp Pro Leu Pro Arg Pro
15                  20                  25                  30

gag ttt aac cag tcc aac tcg acc acc tcc agt ccg gcg ccg tcg ggc       144
Glu Phe Asn Gln Ser Asn Ser Thr Thr Ser Ser Pro Ala Pro Ser Gly
                35                  40                  45

ggc gcg gcc gcc aac ccc gac gcc gcg gcg agc ctg gcc tcg gcg tcc       192
Gly Ala Ala Ala Asn Pro Asp Ala Ala Ala Ser Leu Ala Ser Ala Ser
            50                  55                  60
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gct gtc agc acc gac ttt atg agc aac ctg agc ctg ctg gag gag agt      240
Ala Val Ser Thr Asp Phe Met Ser Asn Leu Ser Leu Leu Glu Glu Ser
        65                  70                  75

gag gac ttc gcg cgg gcg cca ggc tgc gtg gcc gtg gcg gcg gcg gct      288
Glu Asp Phe Ala Arg Ala Pro Gly Cys Val Ala Val Ala Ala Ala Ala
    80                  85                  90

gcg gcc agc agg ggc ctg tgc ggg gac ttc cag ggc ccc gag gcg ggc      336
Ala Ala Ser Arg Gly Leu Cys Gly Asp Phe Gln Gly Pro Glu Ala Gly
95                  100                 105                 110

tgc gtg cac cca gcg ccg cca cag ccc cca ccg acc ggg ccg ctg tcg      384
Cys Val His Pro Ala Pro Pro Gln Pro Pro Pro Thr Gly Pro Leu Ser
                115                 120                 125

cag ccc cca ccc gtg cct ccc tcc gct gcc gcc gcc gcg ggg cca ctc      432
Gln Pro Pro Pro Val Pro Pro Ser Ala Ala Ala Ala Ala Gly Pro Leu
            130                 135                 140

gcg gga cag ccg cgc aag acc agc tcg tcg cgc cgc aac gcg tgg ggc      480
Ala Gly Gln Pro Arg Lys Thr Ser Ser Ser Arg Arg Asn Ala Trp Gly
        145                 150                 155

aac ctg tcg tac gcc gac ctc atc acc aag gcc atc gag agc tca gcc      528
Asn Leu Ser Tyr Ala Asp Leu Ile Thr Lys Ala Ile Glu Ser Ser Ala
    160                 165                 170

gag aag agg ctc acc ctg tcg cag atc tac gag tgg atg gtg aag agc      576
Glu Lys Arg Leu Thr Leu Ser Gln Ile Tyr Glu Trp Met Val Lys Ser
175                 180                 185                 190

gtg ccc tac ttc aag gat aag ggc gac agc aac agc tcg gcg ggc tgg      624
Val Pro Tyr Phe Lys Asp Lys Gly Asp Ser Asn Ser Ser Ala Gly Trp
                195                 200                 205

aag aat tca att cgc cac aat ctg tcc ctt cac agc aag ttt att cga      672
Lys Asn Ser Ile Arg His Asn Leu Ser Leu His Ser Lys Phe Ile Arg
            210                 215                 220

gtg cag aat gaa gga act gga aag agt tct tgg tgg atg ctc aat cca      720
Val Gln Asn Glu Gly Thr Gly Lys Ser Ser Trp Trp Met Leu Asn Pro
        225                 230                 235

gag gga ggc aag agc gga aaa tca ccc cgg aga aga gct gcg tcc atg      768
Glu Gly Gly Lys Ser Gly Lys Ser Pro Arg Arg Arg Ala Ala Ser Met
    240                 245                 250

gac aac aac agt aaa ttt gct aag agc cga ggg cgg gct gct aag aaa      816
Asp Asn Asn Ser Lys Phe Ala Lys Ser Arg Gly Arg Ala Ala Lys Lys
255                 260                 265                 270

aaa gca tct ctc cag tct ggg caa gag ggt cct gga gac agc cct ggg      864
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Lys Ala Ser Leu Gln Ser Gly Gln Glu Gly Pro Gly Asp Ser Pro Gly
                275                 280                 285

tct cag ttt tct aag tgg cct gcg agt cct ggg tcc cac agc aac gat      912
Ser Gln Phe Ser Lys Trp Pro Ala Ser Pro Gly Ser His Ser Asn Asp
            290                 295                 300

gac ttt gat aac tgg agt aca ttt cgt cct cga acc agc tca aat gct      960
Asp Phe Asp Asn Trp Ser Thr Phe Arg Pro Arg Thr Ser Ser Asn Ala
        305                 310                 315

agt acc atc agt ggg aga ctt tct ccc atc atg aca gag cag gat gac     1008
Ser Thr Ile Ser Gly Arg Leu Ser Pro Ile Met Thr Glu Gln Asp Asp
    320                 325                 330

ctg gga gat ggg gac gtg cat tcc ctg gtg tat cca ccc tct gct gcc     1056
Leu Gly Asp Gly Asp Val His Ser Leu Val Tyr Pro Pro Ser Ala Ala
335                 340                 345                 350

aag atg gcg tct acg ctg ccc agt ctg tct gaa atc agc aat cca gaa     1104
Lys Met Ala Ser Thr Leu Pro Ser Leu Ser Glu Ile Ser Asn Pro Glu
                355                 360                 365

aac atg gag aac ctt ctg gat aat ctc aac ctt ctc tcg tcc cca aca     1152
Asn Met Glu Asn Leu Leu Asp Asn Leu Asn Leu Leu Ser Ser Pro Thr
            370                 375                 380

tct tta act gtg tcc acc cag tcc tcg cct ggc agc atg atg cag cag     1200
Ser Leu Thr Val Ser Thr Gln Ser Ser Pro Gly Ser Met Met Gln Gln
        385                 390                 395

aca cca tgc tat tcg ttt gca ccg cca aac acc agt cta aat tca ccc     1248
Thr Pro Cys Tyr Ser Phe Ala Pro Pro Asn Thr Ser Leu Asn Ser Pro
    400                 405                 410

agt cca aac tac tca aag tac aca tac ggc caa tcc agc atg agc cct     1296
Ser Pro Asn Tyr Ser Lys Tyr Thr Tyr Gly Gln Ser Ser Met Ser Pro
415                 420                 425                 430

ttg ccc cag atg cct atg cag aca ctt cag gac agc aaa tca agt tac     1344
Leu Pro Gln Met Pro Met Gln Thr Leu Gln Asp Ser Lys Ser Ser Tyr
                435                 440                 445

gga gga ttg aac cag tat aac tgt gcc cca gga ctc ttg aaa gag ttg     1392
Gly Gly Leu Asn Gln Tyr Asn Cys Ala Pro Gly Leu Leu Lys Glu Leu
            450                 455                 460

ttg act tct gac tct cct ccc cac aat gac att atg tca ccg gtt gat     1440
Leu Thr Ser Asp Ser Pro Pro His Asn Asp Ile Met Ser Pro Val Asp
        465                 470                 475

ccc gga gtg gcc caa ccc aac agt cgg gtc ctg ggc caa aat gta atg     1488
Pro Gly Val Ala Gln Pro Asn Ser Arg Val Leu Gly Gln Asn Val Met
    480                 485                 490
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atg ggc cct aat tcg gtc atg cca gcg tat ggc agc cag gca tct cat     1536
Met Gly Pro Asn Ser Val Met Pro Ala Tyr Gly Ser Gln Ala Ser His
495                 500                 505                 510

aac aaa atg atg aac ccc agc tcc cac acc cac cct gga cat gca cag     1584
Asn Lys Met Met Asn Pro Ser Ser His Thr His Pro Gly His Ala Gln
                515                 520                 525

caa acg gct tcg gtc aac ggc cgt acc ctg ccc cat gtg gtg aac acc     1632
Gln Thr Ala Ser Val Asn Gly Arg Thr Leu Pro His Val Val Asn Thr
            530                 535                 540

atg cct cac aca tct gcc atg aac cgc ttg acc ccc gtg aag aca cct     1680
Met Pro His Thr Ser Ala Met Asn Arg Leu Thr Pro Val Lys Thr Pro
        545                 550                 555

tta caa gtg cct ctg tcc cac ccc atg cag atg agt gcc ctg ggc agc     1728
Leu Gln Val Pro Leu Ser His Pro Met Gln Met Ser Ala Leu Gly Ser
    560                 565                 570

tac tcc tcg gtg agc agc tgc aat ggc tat ggt agg atg ggt gtc ctc     1776
Tyr Ser Ser Val Ser Ser Cys Asn Gly Tyr Gly Arg Met Gly Val Leu
575                 580                 585                 590

cac cag gag aag ctc cca agt gac ttg gat ggc atg ttt att gag cgc     1824
His Gln Glu Lys Leu Pro Ser Asp Leu Asp Gly Met Phe Ile Glu Arg
                595                 600                 605

ttg gac tgt gac atg gag tcc atc att cgg aat gac ccc atg gat gga     1872
Leu Asp Cys Asp Met Glu Ser Ile Ile Arg Asn Asp Pro Met Asp Gly
            610                 615                 620

gat acc ttg gat ttt aac ttt gat aat gtg ttg ccc aac caa agc ttc     1920
Asp Thr Leu Asp Phe Asn Phe Asp Asn Val Leu Pro Asn Gln Ser Phe
        625                 630                 635

cca cac agt gtc aag act aca aca cac agc tgg gtg tca ggc taa         1965
Pro His Ser Val Lys Thr Thr Thr His Ser Trp Val Ser Gly
    640                 645                 650

gagtttagtg agcaggctac atttaaaagt ccttcagatt gtctgacagc aggaactgag   2025

gagcagtcca aagatgccct tcacccctcc ttatagtttt caagattaaa aaaaaaaaaa   2085

aaaaaaaaaa aaaaaaaa                                                2103
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Leu Pro Arg Gln Arg Ser Cys Ala Trp Pro Leu Pro Arg Pro Glu Phe
            20                  25                  30

Asn Gln Ser Asn Ser Thr Thr Ser Ser Pro Ala Pro Ser Gly Gly Ala
        35                  40                  45

Ala Ala Asn Pro Asp Ala Ala Ala Ser Leu Ala Ser Ala Ser Ala Val
    50                  55                  60

Ser Thr Asp Phe Met Ser Asn Leu Ser Leu Leu Glu Glu Ser Glu Asp
65                  70                  75                  80

Phe Ala Arg Ala Pro Gly Cys Val Ala Val Ala Ala Ala Ala Ala Ala
                85                  90                  95

Ser Arg Gly Leu Cys Gly Asp Phe Gln Gly Pro Glu Ala Gly Cys Val
            100                 105                 110

His Pro Ala Pro Pro Gln Pro Pro Pro Thr Gly Pro Leu Ser Gln Pro
        115                 120                 125

Pro Pro Val Pro Pro Ser Ala Ala Ala Ala Ala Gly Pro Leu Ala Gly
    130                 135                 140

Gln Pro Arg Lys Thr Ser Ser Ser Arg Arg Asn Ala Trp Gly Asn Leu
145                 150                 155                 160

Ser Tyr Ala Asp Leu Ile Thr Lys Ala Ile Glu Ser Ser Ala Glu Lys
                165                 170                 175

Arg Leu Thr Leu Ser Gln Ile Tyr Glu Trp Met Val Lys Ser Val Pro
            180                 185                 190

Tyr Phe Lys Asp Lys Gly Asp Ser Asn Ser Ser Ala Gly Trp Lys Asn
        195                 200                 205
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Ser Ile Arg His Asn Leu Ser Leu His Ser Lys Phe Ile Arg Val Gln
    210                 215                 220

Asn Glu Gly Thr Gly Lys Ser Ser Trp Trp Met Leu Asn Pro Glu Gly
225                 230                 235                 240

Gly Lys Ser Gly Lys Ser Pro Arg Arg Arg Ala Ala Asp Met Asp Asn
                245                 250                 255

Asn Ser Lys Phe Ala Lys Ser Arg Gly Arg Ala Ala Lys Lys Lys Ala
            260                 265                 270

Ser Leu Gln Ser Gly Gln Glu Gly Pro Gly Asp Ser Pro Gly Ser Gln
        275                 280                 285

Phe Ser Lys Trp Pro Ala Ser Pro Gly Ser His Ser Asn Asp Asp Phe
    290                 295                 300

Asp Asn Trp Ser Thr Phe Arg Pro Arg Thr Ser Ala Asn Ala Ser Thr
305                 310                 315                 320

Ile Ser Gly Arg Leu Ser Pro Ile Met Thr Glu Gln Asp Asp Leu Gly
                325                 330                 335

Asp Gly Asp Val His Ser Leu Val Tyr Pro Pro Ser Ala Ala Lys Met
            340                 345                 350

Ala Ser Thr Leu Pro Ser Leu Ser Glu Ile Ser Asn Pro Glu Asn Met
        355                 360                 365

Glu Asn Leu Leu Asp Asn Leu Asn Leu Leu Ser Ser Pro Thr Ser Leu
    370                 375                 380

Thr Val Ser Thr Gln Ser Ser Pro Gly Ser Met Met Gln Gln Thr Pro
385                 390                 395                 400

Cys Tyr Ser Phe Ala Pro Pro Asn Thr Ser Leu Asn Ser Pro Ser Pro
                405                 410                 415

Asn Tyr Ser Lys Tyr Thr Tyr Gly Gln Ser Ser Met Ser Pro Leu Pro
            420                 425                 430
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Gln Met Pro Met Gln Thr Leu Gln Asp Ser Lys Ser Ser Tyr Gly Gly
        435                 440                 445

Leu Asn Gln Tyr Asn Cys Ala Pro Gly Leu Leu Lys Glu Leu Leu Thr
    450                 455                 460

Ser Asp Ser Pro Pro His Asn Asp Ile Met Ser Pro Val Asp Pro Gly
465                 470                 475                 480

Val Ala Gln Pro Asn Ser Arg Val Leu Gly Gln Asn Val Met Met Gly
                485                 490                 495

Pro Asn Ser Val Met Pro Ala Tyr Gly Ser Gln Ala Ser His Asn Lys
            500                 505                 510

Met Met Asn Pro Ser Ser His Thr His Pro Gly His Ala Gln Gln Thr
        515                 520                 525

Ala Ser Val Asn Gly Arg Thr Leu Pro His Val Val Asn Thr Met Pro
    530                 535                 540

His Thr Ser Ala Met Asn Arg Leu Thr Pro Val Lys Thr Pro Leu Gln
545                 550                 555                 560

Val Pro Leu Ser His Pro Met Gln Met Ser Ala Leu Gly Ser Tyr Ser
                565                 570                 575

Ser Val Ser Ser Cys Asn Gly Tyr Gly Arg Met Gly Val Leu His Gln
            580                 585                 590

Glu Lys Leu Pro Ser Asp Leu Asp Gly Met Phe Ile Glu Arg Leu Asp
        595                 600                 605

Cys Asp Met Glu Ser Ile Ile Arg Asn Asp Pro Met Asp Gly Asp Thr
    610                 615                 620

Leu Asp Phe Asn Phe Asp Asn Val Leu Pro Asn Gln Ser Phe Pro His
625                 630                 635                 640
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Ser Val Lys Thr Thr Thr His Ser Trp Val Ser Gly
645 650

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<213> Homo sapiens

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Met Ala Glu Ala Pro Gln Val Val Glu Ile Asp Pro Asp Phe Glu Pro
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20 25 30

Ser Gln Ser Asn Ser Ala Thr Ser Ser Pro Ala Pro Ser Gly Ser Ala
35 40 45

Ala Ala Asn Pro Asp Ala Ala Ala Gly Leu Pro Ser Ala Ser Ala Ala
50 55 60

Ala Val Ser Ala Asp Phe Met Ser Asn Leu Ser Leu Leu Glu Glu Ser
65 70 75 80

Glu Asp Phe Pro Gln Ala Pro Gly Ser Val Ala Ala Ala Val Ala Ala
85 90 95

Ala Ala Ala Ala Ala Ala Thr Gly Gly Leu Cys Gly Asp Phe Gln Gly
100 105 110

Pro Glu Ala Gly Cys Leu His Pro Ala Pro Pro Gln Pro Pro Pro Pro
115 120 125

Gly Pro Leu Ser Gln His Pro Pro Val Pro Pro Ala Ala Ala Gly Pro
130 135 140

Leu Ala Gly Gln Pro Arg Lys Ser Ser Ser Ser Arg Arg Asn Ala Trp
145 150 155 160

Gly Asn Leu Ser Tyr Ala Asp Leu Ile Thr Lys Ala Ile Glu Ser Ser
165 170 175

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Ala Glu Lys Arg Leu Thr Leu Ser Gln Ile Tyr Glu Trp Met Val Lys
            180                 185                 190

Ser Val Pro Tyr Phe Lys Asp Lys Gly Asp Ser Asn Ser Ser Ala Gly
        195                 200                 205

Trp Lys Asn Ser Ile Arg His Asn Leu Ser Leu His Ser Lys Phe Ile
    210                 215                 220

Arg Val Gln Asn Glu Gly Thr Gly Lys Ser Ser Trp Trp Met Leu Asn
225                 230                 235                 240

Pro Glu Gly Gly Lys Ser Gly Lys Ser Pro Arg Arg Arg Ala Ala Ser
                245                 250                 255

Met Asp Asn Asn Ser Lys Phe Ala Lys Ser Arg Ser Arg Ala Ala Lys
            260                 265                 270

Lys Lys Ala Ser Leu Gln Ser Gly Gln Glu Gly Ala Gly Asp Ser Pro
        275                 280                 285

Gly Ser Gln Phe Ser Lys Trp Pro Ala Ser Pro Gly Ser His Ser Asn
    290                 295                 300

Asp Asp Phe Asp Asn Trp Ser Thr Phe Arg Pro Arg Thr Ser Ser Asn
305                 310                 315                 320

Ala Ser Thr Ile Ser Gly Arg Leu Ser Pro Ile Met Thr Glu Gln Asp
                325                 330                 335

Asp Leu Gly Glu Gly Asp Val His Ser Met Val Tyr Pro Pro Ser Ala
            340                 345                 350

Ala Lys Met Ala Ser Thr Leu Pro Ser Leu Ser Glu Ile Ser Asn Pro
        355                 360                 365

Glu Asn Met Glu Asn Leu Leu Asp Asn Leu Asn Leu Leu Ser Ser Pro
    370                 375                 380

Thr Ser Leu Thr Val Ser Thr Gln Ser Ser Pro Gly Thr Met Met Gln
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385 390 395 400

Gln Thr Pro Cys Tyr Ser Phe Ala Pro Pro Asn Thr Ser Leu Asn Ser
405 410 415

Pro Ser Pro Asn Tyr Gln Lys Tyr Thr Tyr Gly Gln Ser Ser Met Ser
420 425 430

Pro Leu Pro Gln Met Pro Ile Gln Thr Leu Gln Asp Asn Lys Ser Ser
435 440 445

Tyr Gly Gly Met Ser Gln Tyr Asn Cys Ala Pro Gly Leu Leu Lys Glu
450 455 460

Leu Leu Thr Ser Asp Ser Pro Pro His Asn Asp Ile Met Thr Pro Val
465 470 475 480

Asp Pro Gly Val Ala Gln Pro Asn Ser Arg Val Leu Gly Gln Asn Val
485 490 495

Met Met Gly Pro Asn Ser Val Met Ser Thr Tyr Gly Ser Gln Ala Ser
500 505 510

His Asn Lys Met Met Asn Pro Ser Ser His Thr His Pro Gly His Ala
515 520 525

Gln Gln Thr Ser Ala Val Asn Gly Arg Pro Leu Pro His Thr Val Ser
530 535 540

Thr Met Pro His Thr Ser Gly Met Asn Arg Leu Thr Gln Val Lys Thr
545 550 555 560

Pro Val Gln Val Pro Leu Pro His Pro Met Gln Met Ser Ala Leu Gly
565 570 575

Gly Tyr Ser Ser Val Ser Ser Cys Asn Gly Tyr Gly Arg Met Gly Leu
580 585 590

Leu His Gln Glu Lys Leu Pro Ser Asp Leu Asp Gly Met Phe Ile Glu
595 600 605

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Arg Leu Asp Cys Asp Met Glu Ser Ile Ile Arg Asn Asp Leu Met Asp
    610                 615                 620

Gly Asp Thr Leu Asp Phe Asn Phe Asp Asn Val Leu Pro Asn Gln Ser
625                 630                 635                 640

Phe Pro His Ser Val Lys Thr Thr Thr His Ser Trp Val Ser Gly
                645                 650                 655
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<222> (386)..(2353)

<400> 5

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ctgccccggc ccggcggctc tggccggccg tccagtccgt gcggcggacc ccgaggagcc    180

tcgatgtgga tggccccgcg aagttaagtt ctgggctcgc gcttccactc cgccgcgcct    240

tcctcccagt ttccgtccgc tcgccgcacc ggcttcgttc ccccaaatct cggaccgtcc    300

cttcgcgccc cctccccgtc cgcccccagt gctgcgttct ccccctcttg gctctcctgc    360

ggctggggga ggggcggggg tcacc atg gcc gag gcg cct cag gtg gtg gag      412
                           Met Ala Glu Ala Pro Gln Val Val Glu
                           1               5

atc gac ccg gac ttc gag ccg ctg ccc cgg ccg cgc tcg tgc acc tgg      460
Ile Asp Pro Asp Phe Glu Pro Leu Pro Arg Pro Arg Ser Cys Thr Trp
10                  15                  20                  25

ccg ctg ccc agg ccg gag ttt agc cag tcc aac tcg gcc acc tcc agc      508
Pro Leu Pro Arg Pro Glu Phe Ser Gln Ser Asn Ser Ala Thr Ser Ser
                30                  35                  40

ccg gcg ccg tcg ggc agc gcg gct gcc aac ccc gac gcc gcg gcg ggc      556
Pro Ala Pro Ser Gly Ser Ala Ala Ala Asn Pro Asp Ala Ala Ala Gly
            45                  50                  55

ctg ccc tcg gcc tcg gct gcc gct gtc agc gcc gac ttc atg agc aac      604
Leu Pro Ser Ala Ser Ala Ala Ala Val Ser Ala Asp Phe Met Ser Asn
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        60                  65                  70

ctg agc ttg ctg gag gag agc gag gac ttc ccg cag gcg ccc ggc tcc      652
Leu Ser Leu Leu Glu Glu Ser Glu Asp Phe Pro Gln Ala Pro Gly Ser
    75                  80                  85

gtg gcg gcg gcg gtg gcg gcg gcg gcc gcc gcg gcc gcc acc ggg ggg      700
Val Ala Ala Ala Val Ala Ala Ala Ala Ala Ala Ala Ala Thr Gly Gly
90                  95                  100                 105

ctg tgc ggg gac ttc cag ggc ccg gag gcg ggc tgc ctg cac cca gcg      748
Leu Cys Gly Asp Phe Gln Gly Pro Glu Ala Gly Cys Leu His Pro Ala
                110                 115                 120

cca ccg cag ccc ccg ccg ccc ggg ccg ctg tcg cag cac ccg ccg gtg      796
Pro Pro Gln Pro Pro Pro Pro Gly Pro Leu Ser Gln His Pro Pro Val
            125                 130                 135

ccc ccc gcc gcc gct ggg ccg ctc gcg ggg cag ccg cgc aag agc agc      844
Pro Pro Ala Ala Ala Gly Pro Leu Ala Gly Gln Pro Arg Lys Ser Ser
        140                 145                 150

tcg tcc cgc cgc aac gcg tgg ggc aac ctg tcc tac gcc gac ctc atc      892
Ser Ser Arg Arg Asn Ala Trp Gly Asn Leu Ser Tyr Ala Asp Leu Ile
    155                 160                 165

acc aag gcc atc gag agc tcg gcg gag aag cgg ctc acg ctg tcg cag      940
Thr Lys Ala Ile Glu Ser Ser Ala Glu Lys Arg Leu Thr Leu Ser Gln
170                 175                 180                 185

atc tac gag tgg atg gtc aag agc gtg ccc tac ttc aag gat aag ggt      988
Ile Tyr Glu Trp Met Val Lys Ser Val Pro Tyr Phe Lys Asp Lys Gly
                190                 195                 200

gac agc aac agc tcg gcg ggc tgg aag aat tca att cgt cat aat ctg     1036
Asp Ser Asn Ser Ser Ala Gly Trp Lys Asn Ser Ile Arg His Asn Leu
            205                 210                 215

tcc cta cac agc aag ttc att cgt gtg cag aat gaa gga act gga aaa     1084
Ser Leu His Ser Lys Phe Ile Arg Val Gln Asn Glu Gly Thr Gly Lys
        220                 225                 230

agt tct tgg tgg atg ctc aat cca gag ggt ggc aag agc ggg aaa tct     1132
Ser Ser Trp Trp Met Leu Asn Pro Glu Gly Gly Lys Ser Gly Lys Ser
    235                 240                 245

cct agg aga aga gct gca tcc atg gac aac aac agt aaa ttt gct aag     1180
Pro Arg Arg Arg Ala Ala Ser Met Asp Asn Asn Ser Lys Phe Ala Lys
250                 255                 260                 265

agc cga agc cga gct gcc aag aag aaa gca tct ctc cag tct ggc cag     1228
Ser Arg Ser Arg Ala Ala Lys Lys Lys Ala Ser Leu Gln Ser Gly Gln
                270                 275                 280
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gag ggt gct ggg gac agc cct gga tca cag ttt tcc aaa tgg cct gca     1276
Glu Gly Ala Gly Asp Ser Pro Gly Ser Gln Phe Ser Lys Trp Pro Ala
            285                 290                 295

agc cct ggc tct cac agc aat gat gac ttt gat aac tgg agt aca ttt     1324
Ser Pro Gly Ser His Ser Asn Asp Asp Phe Asp Asn Trp Ser Thr Phe
        300                 305                 310

cgc cct cga act agc tca aat gct agt act att agt ggg aga ctc tca     1372
Arg Pro Arg Thr Ser Ser Asn Ala Ser Thr Ile Ser Gly Arg Leu Ser
    315                 320                 325

ccc att atg acc gaa cag gat gat ctt gga gaa ggg gat gtg cat tct     1420
Pro Ile Met Thr Glu Gln Asp Asp Leu Gly Glu Gly Asp Val His Ser
330                 335                 340                 345

atg gtg tac ccg cca tct gcc gca aag atg gcc tct act tta ccc agt     1468
Met Val Tyr Pro Pro Ser Ala Ala Lys Met Ala Ser Thr Leu Pro Ser
                350                 355                 360

ctg tct gag ata agc aat ccc gaa aac atg gaa aat ctt ttg gat aat     1516
Leu Ser Glu Ile Ser Asn Pro Glu Asn Met Glu Asn Leu Leu Asp Asn
            365                 370                 375

ctc aac ctt ctc tca tca cca aca tca tta act gtt tcg acc cag tcc     1564
Leu Asn Leu Leu Ser Ser Pro Thr Ser Leu Thr Val Ser Thr Gln Ser
        380                 385                 390

tca cct ggc acc atg atg cag cag acg ccg tgc tac tcg ttt gcg cca     1612
Ser Pro Gly Thr Met Met Gln Gln Thr Pro Cys Tyr Ser Phe Ala Pro
    395                 400                 405

cca aac acc agt ttg aat tca ccc agc cca aac tac caa aaa tat aca     1660
Pro Asn Thr Ser Leu Asn Ser Pro Ser Pro Asn Tyr Gln Lys Tyr Thr
410                 415                 420                 425

tat ggc caa tcc agc atg agc cct ttg ccc cag atg cct ata caa aca     1708
Tyr Gly Gln Ser Ser Met Ser Pro Leu Pro Gln Met Pro Ile Gln Thr
                430                 435                 440

ctt cag gac aat aag tcg agt tat gga ggt atg agt cag tat aac tgt     1756
Leu Gln Asp Asn Lys Ser Ser Tyr Gly Gly Met Ser Gln Tyr Asn Cys
            445                 450                 455

gcg cct gga ctc ttg aag gag ttg ctg act tct gac tct cct ccc cat     1804
Ala Pro Gly Leu Leu Lys Glu Leu Leu Thr Ser Asp Ser Pro Pro His
        460                 465                 470

aat gac att atg aca cca gtt gat cct ggg gta gcc cag ccc aac agc     1852
Asn Asp Ile Met Thr Pro Val Asp Pro Gly Val Ala Gln Pro Asn Ser
    475                 480                 485

cgg gtt ctg ggc cag aac gtc atg atg ggc cct aat tcg gtc atg tca     1900
Arg Val Leu Gly Gln Asn Val Met Met Gly Pro Asn Ser Val Met Ser
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490                 495                 500                 505

acc tat ggc agc cag gca tct cat aac aaa atg atg aat ccc agc tcc     1948
Thr Tyr Gly Ser Gln Ala Ser His Asn Lys Met Met Asn Pro Ser Ser
                510                 515                 520

cat acc cac cct gga cat gct cag cag aca tct gca gtt aac ggg cgt     1996
His Thr His Pro Gly His Ala Gln Gln Thr Ser Ala Val Asn Gly Arg
            525                 530                 535

ccc ctg ccc cac acg gta agc acc atg ccc cac acc tcg ggt atg aac     2044
Pro Leu Pro His Thr Val Ser Thr Met Pro His Thr Ser Gly Met Asn
        540                 545                 550

cgc ctg acc caa gtg aag aca cct gta caa gtg cct ctg ccc cac ccc     2092
Arg Leu Thr Gln Val Lys Thr Pro Val Gln Val Pro Leu Pro His Pro
    555                 560                 565

atg cag atg agt gcc ctg ggg ggc tac tcc tcc gtg agc agc tgc aat     2140
Met Gln Met Ser Ala Leu Gly Gly Tyr Ser Ser Val Ser Ser Cys Asn
570                 575                 580                 585

ggc tat ggc aga atg ggc ctt ctc cac cag gag aag ctc cca agt gac     2188
Gly Tyr Gly Arg Met Gly Leu Leu His Gln Glu Lys Leu Pro Ser Asp
                590                 595                 600

ttg gat ggc atg ttc att gag cgc tta gac tgt gac atg gaa tcc atc     2236
Leu Asp Gly Met Phe Ile Glu Arg Leu Asp Cys Asp Met Glu Ser Ile
            605                 610                 615

att cgg aat gac ctc atg gat gga gat aca ttg gat ttt aac ttt gac     2284
Ile Arg Asn Asp Leu Met Asp Gly Asp Thr Leu Asp Phe Asn Phe Asp
        620                 625                 630

aat gtg ttg ccc aac caa agc ttc cca cac agt gtc aag aca acg aca     2332
Asn Val Leu Pro Asn Gln Ser Phe Pro His Ser Val Lys Thr Thr Thr
    635                 640                 645

cat agc tgg gtg tca ggc tga gggttagtga gcaggttaca cttaaaagta       2383
His Ser Trp Val Ser Gly
650                 655

cttcagattg tctgacagca ggaactgaga gaagcagtcc aaagatgtct ttcaccaact  2443

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gttatgtgct gctgtagata aggactgtgc cattggaaat ttcattacaa tgaagtgcca  2623

aactcactac accatataat tgcagaaaag attttcagat cctggtgtgc tttcaagttt  2683

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Trp Glu Ser His Pro Thr Gln Ala Phe Val Lys Gln His Leu Cys Gly
            20                  25                  30

Ser His Leu Val Glu Ala Leu Tyr Leu Val Cys Gly Glu Arg Gly Phe
        35                  40                  45

Phe Tyr Thr Pro Met Ser Arg Arg Glu Val Glu Asp Pro Gln Val Ala
    50                  55                  60

Gln Leu Glu Leu Gly Gly Gly Pro Gly Ala Gly Asp Leu Gln Thr Leu
65                  70                  75                  80

Ala Leu Glu Val Ala Gln Gln Lys Arg Gly Ile Val Asp Gln Cys Cys
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Thr Ser Ile Cys Ser Leu Tyr Gln Leu Glu Asn Tyr Cys Asn
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gttattgttt caac atg gcc ctg tgg atg cgc ttc ctg ccc ctg ctg gcc      110
               Met Ala Leu Trp Met Arg Phe Leu Pro Leu Leu Ala
               1               5                   10

ctg ctc ttc ctc tgg gag tcc cac ccc acc cag gct ttt gtc aag cag      158
Leu Leu Phe Leu Trp Glu Ser His Pro Thr Gln Ala Phe Val Lys Gln
        15                  20                  25

cac ctt tgt ggt tcc cac ctg gtg gag gct ctc tac ctg gtg tgt ggg      206
His Leu Cys Gly Ser His Leu Val Glu Ala Leu Tyr Leu Val Cys Gly
    30                  35                  40
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gag cgt ggc ttc ttc tac aca ccc atg tcc cgc cgt gaa gtg gag gac      254
Glu Arg Gly Phe Phe Tyr Thr Pro Met Ser Arg Arg Glu Val Glu Asp
45                  50                  55                  60

cca caa gtg gca caa ctg gag ctg ggt gga ggc ccg gga gca ggt gac      302
Pro Gln Val Ala Gln Leu Glu Leu Gly Gly Gly Pro Gly Ala Gly Asp
                65                  70                  75

ctt cag acc ttg gca ctg gag gtg gcc cag cag aag cgt ggc att gta      350
Leu Gln Thr Leu Ala Leu Glu Val Ala Gln Gln Lys Arg Gly Ile Val
            80                  85                  90

gat cag tgc tgc acc agc atc tgc tcc ctc tac cag ctg gag aac tac      398
Asp Gln Cys Cys Thr Ser Ile Cys Ser Leu Tyr Gln Leu Glu Asn Tyr
        95                  100                 105

tgc aac tag acccaccact acccagccta ccctctgca atgaataaaa               447
Cys Asn
    110

cctttgaatg agg                                                      460
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1               5                   10                  15

Trp Gly Pro Asp Pro Ala Ala Ala Phe Val Asn Gln His Leu Cys Gly
            20                  25                  30

Ser His Leu Val Glu Ala Leu Tyr Leu Val Cys Gly Glu Arg Gly Phe
        35                  40                  45

Phe Tyr Thr Pro Lys Thr Arg Arg Glu Ala Glu Asp Leu Gln Val Gly
    50                  55                  60

Gln Val Glu Leu Gly Gly Gly Pro Gly Ala Gly Ser Leu Gln Pro Leu
65                  70                  75                  80

Ala Leu Glu Gly Ser Leu Gln Lys Arg Gly Ile Val Glu Gln Cys Cys
                85                  90                  95
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Thr Ser Ile Cys Ser Leu Tyr Gln Leu Glu Asn Tyr Cys Asn
            100                 105                 110


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atg cgc ctc ctg ccc ctg ctg gcg ctg ctg gcc ctc tgg gga cct gac      104
Met Arg Leu Leu Pro Leu Leu Ala Leu Leu Ala Leu Trp Gly Pro Asp
5                   10                  15                  20

cca gcc gca gcc ttt gtg aac caa cac ctg tgc ggc tca cac ctg gtg      152
Pro Ala Ala Ala Phe Val Asn Gln His Leu Cys Gly Ser His Leu Val
                25                  30                  35

gaa gct ctc tac cta gtg tgc ggg gaa cga ggc ttc ttc tac aca ccc      200
Glu Ala Leu Tyr Leu Val Cys Gly Glu Arg Gly Phe Phe Tyr Thr Pro
            40                  45                  50

aag acc cgc cgg gag gca gag gac ctg cag gtg ggg cag gtg gag ctg      248
Lys Thr Arg Arg Glu Ala Glu Asp Leu Gln Val Gly Gln Val Glu Leu
        55                  60                  65

ggc ggg ggc cct ggt gca ggc agc ctg cag ccc ttg gcc ctg gag ggg      296
Gly Gly Gly Pro Gly Ala Gly Ser Leu Gln Pro Leu Ala Leu Glu Gly
    70                  75                  80

tcc ctg cag aag cgt ggc att gtg gaa caa tgc tgt acc agc atc tgc      344
Ser Leu Gln Lys Arg Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys
85                  90                  95                  100

tcc ctc tac cag ctg gag aac tac tgc aac tag acgcagcccg caggcagccc    397
Ser Leu Tyr Gln Leu Glu Asn Tyr Cys Asn
                105                 110

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